

U.S. Patent Application No. 09/937,016
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AMENDMENT TO THE CLAIMS

Claims 1-13. (Canceled)

Claim 14. (Currently Amended) An assembly comprising:

a shoe and a device for flexural stiffening of the shoe;

said shoe comprising:

an upper including a flexion fold zone, a tibial support zone having an upper front surface, and a flexible front end zone; and

a sole;

said device including a rigid or semi-rigid cover covering said upper front surface of said shoe and extending from within said flexion fold zone of said shoe to said front end zone of said shoe;

said cover being fixed to the sole beneath said front end zone of said upper and between the top and bottom of the sole for articulation relative to the sole;

said cover being fixed to the upper of the shoe at said flexion fold zone and/or to said tibial support zone;

said cover being more rigid than said upper front surface and said flexion fold zone of the shoe so as to interfere with free flexing of the shoe in said flexion fold zone while a wearer's foot is positioned within the shoe.

Claim 15. (Currently Amended) A device for flexural stiffening of an upper of a shoe, including a device for a sports shoe adapted to be fixed onto a sports apparatus, said device comprising a cover configured and arranged to cover a front surface of the shoe and to extend from a tibial support zone of the upper of the shoe, through a flexion fold zone of the upper of the shoe to a front end zone of a sole of the shoe, said cover being

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made of a rigid or semi-rigid material in an entirety of a longitudinal extent of said cover, and connections at least one connection for connecting the cover to the sole of the shoe and for connecting the cover to the upper of the shoe at at least one of the flexion fold zone and the tibial support zone, and a connection for connecting the cover between a top and a bottom of the sole for articulation of the cover relative to the sole.

Claim 16. (Previously Presented) A device according to claim 15, wherein said connections comprise a journal connection for connecting the device to the sole of the shoe.

Claim 17. (Previously Presented) A device according to claim 16, wherein said journal connection is located with respect to said device to be connected to a front zone of the shoe.

Claim 18. (Previously Presented) A device according to claim 15, wherein the device is configured to be removably mounted to the shoe.

Claim 19. (Previously Presented) A device according to claim 15, wherein the device extends from the tibial support zone to a metatarsophalangeal articulation zone and/or the zone of the base of the toes.

Claim 20. (Previously Presented) A device according to claim 15, wherein said connections comprise an insert, affixing the device to the shoe at the sole, and a cover, affixed to the insert, which completely or partially covers the front surface of the insert by manual thrust or traction from a user.

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Claim 21. (Previously Presented) A device according to claim 20, wherein the insert and the cover form a journal, the insert constituting a fixed portion thereof, and the cover constituting a portion movable along a front-to-rear direction of movement.

Claim 22. (Previously Presented) A device according to claim 20, wherein said insert is implanted along an axis transverse to a longitudinal axis of the shoe.

Claim 23. (Previously Presented) A device according to claim 22, wherein the insert is implanted beneath or on opposite sides of said sole, in a zone demarcated at a front by a tip of a foot, at the rear by the front surface of a plantar arch, and laterally by the edges of the sole in their entire thickness.

Claim 24. (Previously Presented) A device according to claim 20, wherein the device is mounted to the shoe by an insertion method using a shaft and lateral inserts extending through all or part of the sole of the shoe.

Claim 25. (Previously Presented) A device according to claim 16, wherein the cover has a pseudo-anatomical shape corresponding to said front surface of the shoe, capable of covering the shoe completely or partially.

Claim 26. (Previously Presented) A device according to claim 15, wherein said connections comprise retaining and immobilizing means on the shoe to fix an upper portion and/or a mid-portion of the device to the upper of the shoe.

Claim 27. (Previously Presented) A device according to claim 15, comprising a plurality of covers to be associated with the same shoe, said plurality of covers including said cover, said plurality of covers having respectively different rigidities.

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Claim 28. (*Previously Presented*) A shoe comprising a stiffening device according to claim 15.

Claim 29. (*Currently Amended*) An assembly comprising:

an article of footwear and a device for increasing flexural rigidity of the article of footwear;

said article of footwear including an upper and a sole, said upper including a flexion fold zone, a tibial support zone, and a front end zone;

said device including a cover covering said flexion fold zone of said article of footwear and extending forwardly from said flexion fold zone at least to said front end zone of said article of footwear;

said cover being rigid or semi-rigid at said flexion fold zone to increase flexural rigidity in said flexion fold zone, and said cover being rigid or semi-rigid at said front end zone;

said cover being connected at least to said upper at said flexion fold zone and/or at said tibial support zone;

said cover being connected to said sole by being articulated to said sole between a top and bottom of said sole.

Claim 30. (*Currently Amended*) An assembly comprising:

an article of footwear and a device for increasing flexural rigidity of the article of footwear;

said article of footwear including an upper and a sole, said upper including a flexion fold zone, an upper front zone, an upper rear zone, and a front end zone, at least one portion of said upper is flexible;

said upper front zone of said upper being contiguous with and extending above said flexion fold zone in an upward direction to adapt the upper front zone to be positioned forward of a lower leg of a wearer of the article of footwear;

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said upper rear zone of said upper extending in said upward direction to adapt the upper rear zone to be positioned rearward of the lower leg of the wearer of the article of footwear;

said front end zone of said upper extending in a direction forward of said flexion fold zone;

said device for increasing rigidity in flexion at least of said upper front zone folding toward said front end zone, said device comprising a cover having three parts, said three parts including an intermediate part, an upper part, and a lower part;

said intermediate part of said cover covering said flexion fold zone of said upper of said article of footwear;

said lower part of said cover extending forwardly from said intermediate part of said cover along an area above said front end zone of said upper of said article of footwear;

said upper part of said cover extending upwardly from said intermediate part of said cover along an area in front of said upper front zone of said upper of said article of footwear, said upper part of said cover extending substantially in said upward direction of said upper front zone and said upper rear zone of said upper of said article of footwear, said cover comprising a continuous rigid or semi-rigid material extending continuously from within in said upper part, through in said intermediate part, and within in said lower part;

at least one of said intermediate and upper parts of said cover being connected to said upper of said article of footwear;

said lower part of said cover being connected to said sole, whereby said continuous rigid or semi-rigid material enables transmission of forces from a wearer's leg to said sole.

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Claim 31. (Previously Presented) An assembly according to claim 29, wherein said cover extends from said tibial support zone to a zone of a metatarsophalangeal joint of the article of footwear and/or a zone of a base of the toes of the article of footwear.

Claim 32. (Previously Presented) An assembly according to claim 29, wherein said device further comprises at least one tightening strap extending rearwardly and downwardly at said flexion fold zone of the article of footwear for connecting said cover to said upper.

Claim 33. (Previously Presented) An assembly according to claim 29, wherein said device further comprises at least one tightening strap extending at least rearwardly from the tibial support zone of the article of footwear for connecting said cover to said upper.

Claim 34. (Previously Presented) An assembly according to claim 29, wherein said device further comprises at least one tightening strap extending at least rearwardly from the tibial support zone of the article of footwear and at least one tightening strap extending rearwardly and downwardly from said flexion fold zone of the article of footwear.

Claim 35. (Previously Presented) An assembly according to claim 29, wherein said cover is attached to a front end zone of said sole of said article of footwear.

Claim 36. (Previously Presented) An assembly according to claim 29, wherein said cover is attached to a forward zone of said sole, said forward zone of said sole extending forwardly from a front end of a plantar arch of said sole.

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Claim 37. (Previously Presented) An assembly according to claim 36, further comprising a fastening mechanism attaching said cover to said sole at a forward zone of said sole, said fastening mechanism connecting said cover to said sole only in said forward zone of said sole.

Claim 38. (Previously Presented) An assembly according to claim 29, wherein said cover is pivotally attached to a forward zone of said sole of said article of footwear, said cover being movable between a forwardmost open position and a rearwardmost closed position.

Claim 39. (Previously Presented) An assembly according to claim 38, wherein said upper of said article of footwear comprises a footwear tightening system, said cover at least partially covering said footwear tightening system in said closed position.

Claim 40. (Previously Presented) An assembly according to claim 29, wherein said sole comprises a plantar arch, and wherein said cover is spaced above said sole, at said plantar arch, a distance greater than a distance said cover is spaced above said sole at a front end zone of said article of footwear.

Claim 41. (Previously Presented) An assembly according to claim 29, wherein said cover is spaced above a median part of said sole a distance greater than a distance said cover is spaced above said sole at a front end zone of said article of footwear.

Claim 42. (Previously Presented) An assembly according to claim 29, wherein said upper of said article of footwear further comprises a closing zone having a longitudinally

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extending contour, wherein said cover has a lower edge having a longitudinally extending contour, and wherein said longitudinally extending contour of said lower edge of said cover generally follows said longitudinally extending contour of said closing zone.

Claim 43. (Previously Presented) An assembly according to claim 29, further comprising a plurality of covers, said plurality including said covers, said plurality having respectively different rigidities.

Claim 44. (Currently Amended) A snowboard boot assembly comprising:

a snowboard boot and a device for increasing flexural rigidity of said snowboard boot to improve transmission of forces from said snowboard boot to an attached snowboard;

said snowboard boot including an upper and a sole, said upper including a front end zone, a flexion fold zone, an ankle zone, and a portion extending above said ankle zone;

said device including a cover for increasing flexural rigidity of said snowboard boot, said cover being attached to ~~said front end zone~~ articulated to said sole of said snowboard boot at a front end zone of said sole between a top and bottom of said sole, and extending rearwardly to cover said flexion fold zone;

removable connections for connecting said cover at said flexion fold zone and/or at said portion extending above said ankle zone;

said upper of said snowboard boot being relatively flexible and said cover being relatively rigid in said front end zone, in said flexion fold zone, and in said portion extending above said ankle zone.

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Claim 45. (*Canceled*)

Claim 46. (*Canceled*)

Claim 47. (*Currently Amended*) A snowboard boot assembly according to claim 44, further comprising a fastening mechanism attaching wherein said cover is articulated to said sole ~~at a front end zone of said sole, wherein said cover is attached to said sole only in said front end zone of said sole.~~

Claim 48. (*Previously Presented*) A snowboard boot assembly according to claim 44, further comprising a plurality of covers, said plurality including said cover, said plurality having respectively different rigidities.

Claim 49. (*Previously Presented*) An assembly according to claim 14, wherein:
said rigid or semi-rigid cover is a rigid cover.

Claim 50. (*Currently Amended*) An assembly according to claim 14, wherein:
said cover comprises a single piece of rigid material along an entirety of a longitudinal extent of said cover.

Claim 51. (*Previously Presented*) A device according to claim 15, wherein:
said cover is made of a rigid material along the entirety of the longitudinal extent of said cover.

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Claim 52. (Currently Amended) A device according to claim 15, wherein:

 said cover comprises a single piece of rigid material along the entirety of the longitudinal extent of said cover.

Claim 53. (Previously Presented) An assembly according to claim 29, wherein:

 said cover is rigid or semi-rigid at said tibial support zone.

Claim 54. (Previously Presented) An assembly according to claim 29, wherein:

 said cover is rigid at front end zone, at said flexion fold zone, and at said tibial support zone.

Claim 55. (Currently Amended) An assembly according to claim 29, wherein:

 said cover comprises a single piece of rigid material along an entirety of a longitudinal extent of said cover.

Claim 56. (Currently Amended) An assembly according to claim 30, wherein:

 said continuous rigid or semi-rigid material of said cover comprises a rigid material along an entirety of said upper part, an entirety of said intermediate part, and an entirety of said lower part.

Claim 57. (Currently Amended) An assembly according to claim 30, wherein:

 said continuous rigid or semi-rigid material of said cover comprises a single piece of rigid material along in said upper part, said intermediate part, and said lower part.

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Claim 58. (Previously Presented) A snowboard boot assembly comprising:

a snowboard boot adapted to be worn by a rider of a snowboard and fixed to

a snowboard, said snowboard boot comprising:

a sole adapted to be supported on the snowboard;

an upper comprising:

a tibial support zone adapted to cover at least a front

portion of a lower leg of a snowboarder;

a front end zone extending from a front end of the upper

to an instep of the upper;

a flexion fold zone between said tibial support zone and

said front end zone;

a front spoiler for increasing rigidity of flexion of said upper at least in said

flexion fold zone for improving transmission of forces from the snowboarder rider to the

snowboard, said front spoiler being removably attached to said upper and extending in said

tibial support zone, in said front end zone and in said flexion fold zone;

said front spoiler being attached to a forward zone of said sole at

transversely spaced apart attachment points between a top and a bottom of said sole, said

front spoiler comprising a rigid material to enable transmission of forces from said tibial

support zone of said upper to said sole.

Claim 59. (Previously Presented) A snowboard boot assembly according to claim

58, wherein:

said spoiler comprises a semi-rigid material in said tibial support zone, in said

front end zone and in said flexion fold zone.

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Claim 60. (Previously Presented) A snowboard boot assembly according to claim 58, wherein:

 said spoiler comprises a rigid material in said tibial support zone, in said front end zone and in said flexion fold zone.

Claim 61. (Previously Presented) A snowboard boot assembly according to claim 58, wherein:

 said spoiler comprises one piece of material in said tibial support zone, in said front end zone and in said flexion fold zone.

Claim 62. (New) A snowboard boot assembly according to claim 58, wherein:

 said spoiler comprises a rigid material continuously extending from within said tibial support zone, through said flexion fold zone, and to within said front end zone.

Claim 63. (New) A snowboard boot assembly according to claim 62, wherein:

 said spoiler is articulated to said forward zone of said sole at said transversely spaced apart attachment points to enable the rider to move said spoiler between a closed position against said snowboard boot to an open position in which said cover is spaced away from at least said tibial support zone of said upper;

 said spoiler has a shape corresponding that of said tibial support zone, said flexion fold zone, and said front end zone of said upper;

 said cover has sufficient rigidity to retain said shape in said open position of said cover.

Claim 64. (New) An assembly according to claim 30, wherein:

 said lower part of said cover is connected to said sole by being articulated to said sole between a top and bottom of said sole.